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ABSTRACT

The growing movement of teacher-as-researcher and the increasing emphasis on qualitative research paradigms call into question the traditional curricula in teacher education programs, which emphasize the teacher as consumer rather than as producer of research. In this study, college faculty and students, and school teachers and administrators were surveyed to find which research skills they thought should be included in graduate teacher education programs. The sample consisted of 146 students and 37 faculty members from a Midwestern private college of education, and 40 teachers and 44 administrators from area school districts. Each group of respondents was asked to complete a survey that included a list of 15 research skills with a Likert-style response rating scale. Respondents were asked to explain the rating they assigned to each skill. The three skills found to be most important by the respondents were: the ability to use library resources; the ability to conduct action research in a classroom setting; and the ability to critically analyze professional literature. The three skills rated least important were: the ability to compute and interpret intermediate and advanced statistics; the ability to publish research findings; and the ability to carry out a formal thesis study. The respondents' explanations of their responses, the complete ratings of all 15 skills by the four stakeholder groups, and a comparison of the ratings assigned by the respondents are presented. It is recommended that teacher education courses prepare students to become reflective practitioners, generators of knowledge, and systematic observers; however incorporating action research into graduate programs may be problematic for students because they do not have their own classrooms. (Author/LH)

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THE RESEARCH COMPONENT IN GRADUATE TEACHER EDUCATION PROGRAMS: ASKING THE STAKEHOLDERS

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The Research Component in Graduate Teacher Education Programs: Asking the Stakeholders

Abstract

The growing movement of teacher-as-researcher and the increasing emphasis on qualitative research paradigms call into question the traditional curricula in teacher education programs which emphasize the teacher as consumer, rather than as producer of research. In this study, stakeholders (i.e., college faculty and students, and school teachers and administrators) were surveyed to find which research skills they thought should be included in graduate teacher education programs. The respondents were a convenient sample of 146 students and 37 faculty members from a Midwestern private college of education; and 40 teachers and 44 administrators from area school districts. Each group of respondents was asked to complete a slightly different version of the survey, but all forms included a list of 15 research skills with a Likert-style response rating scale of 5 (most important) to 1 (not important). Respondents were asked to explain the rating they assigned to each skill. The three skills found to be most important by the respondents were: "Be able to use the library resources," "Be able to carry out action research in a classroom setting," and "Be able to critically analyze professional literature." The three skills rated the least important were "Know how to compute and interpret intermediate or advanced statistics," "Be able to publish research findings," and "Be able to carry out a formal thesis study". The respondents' explanations of their responses, the complete ratings of all 15 skills by the four stakeholder groups, as well as a comparison of the ratings assigned by the respondents are included. Implications for teacher education programs are also included.

The Research Component in Graduate Teacher Education Programs: Asking the Stakeholders

Most, if not all, graduate teacher education programs, include at least one course in research methodology and statistics. It is a widely-accepted opinion that teachers should have at least some basic research skills. Several stakeholders are involved in teacher education: students and faculty in colleges of education, classroom teachers, and school administrators. State board of education officials also have an interest in the subject, through the articulation of requirements of the teacher certification examinations.

This study was design to survey students, faculty, teachers, and administrators about the importance they place on various research skills and compare the ratings assigned to the skills by each of the stakeholder groups. The ratings assigned were then ranked and compared. In addition to the numerical values assigned to each skill, respondents had the opportunity to explain the reasons for their choice.

Theoretical Framework

The growing movement of teacher-as-researcher, classroom action research, and practitioner research, redefine the role of the teachers in the educational research process. In the past, teachers did not participate as equal partners in research studies conducted in their own schools and classrooms, nor were they seen as generators of new ideas and knowledge in the field. Studies of teachers and their students treated them as subjects to be observed and studied. For many preservice and inservice students, it was hard to understand why they should take research and statistics courses if all they would be required to do is "teach their students". However, educators now see teaching as more than just imparting knowledge to students and the role of the classroom teacher has been expanding to include classroom research, reflection, collaboration, and networking. According to Hamilton (1995), "within the past few years, teacher knowledge and teacher research have undergone a reconsideration within the profession - toward the recognition of teachers as knowledge producers and experts in their profession" (p. 79) and two recent books (Anderson, Herr & Nihlen, 1994; Burnaford, Fischer & Hobson, 1996) describe many examples of teacher research. Kinchloe (1991) suggested that teachers engage in research activities to improve the quality of instruction and to promote professional development by increasing collegial sharing of research results. Recognizing the important role of research skills in the teaching profession, Fueyo and Neves (1995) argued for sound research training in preservice teacher education program, to enable the "preservice-teacher-as-researcher" to "ask questions and explore the process for finding answers. He or she reads research findings critically and responsively" (p. 41). Gage and Berliner (1989) advocated preparing teacher-researchers who could think critically, practically, and artistically about research. While many teachers view research skills as contributing to practice, valuable, and useful, they also report feeling inadequately prepared to

either understand or conduct research (Green & Kvidahl, 1990). (Note: a more comprehensive literature review on this paper's topic can be found in Ravid & Leon, 1995.)

In light of the limited time devoted to research courses in teacher education programs, the question of which skills should be included is of utmost importance for those designing the curriculum and for instructors. The increasing emphasis being placed on qualitative research paradigms call into question the traditional curricula in research classes in teacher education programs. In the past, these courses often emphasized statistics and experimental design and classroom teachers were viewed mainly as consumers, rather than producers of research findings and knowledge. The general question of what should be taught at the graduate level was raised by the Special Interest Group (SIG) Professors of Educational Research at the 1995 annual meeting of the American Educational Research Association (AERA) in San Francisco. This SIG sponsored a "Town Meeting" to discuss guidelines for graduate research courses (Guidelines for Graduate Research Courses: Working Recommendations for AERA, Session 18.55).

Methods

Sample. A convenient sample of 267 educators and students responded to the survey. They included the following: 146 graduate students and 37 faculty in a large private college of education in suburban Chicago; and 40 teachers and 44 administrators from neighboring school districts. Of the 146 students, 111 indicated they have had teaching experience or are currently teaching. Their teaching experience ranged from 1-27 years, with a mean of 9.24 and a standard deviation (SD) of 7.33. Table 1 lists the grade level where these students are teaching or have taught.

Table 1

Grade Levels Taught by Students (N = 104)

Grade Level	N	%
K - 3	39	38
4 - 5	5	5
6 - 8	14	14
K - 8	24	23
High School	20	19
K - 12	2	1

These students have taken between 1-43 graduate courses (one student reported having taken 81 courses, so s/he may be enrolling now for a second graduate degree). The mean of the courses

taken was 12.31, with a SD of 8.92. The number of research courses taken by 134 students who provided this information ranged from 10-6, with a mean of 2.12 and a SD of 0.89. The students represented several programs at the college, as can be seen in Table 2.

Table 2

Distribution of Students by Program (N = 146)

Program	N	%
Early Childhood - Field-Based Program (ECE-FBP)	43	30
Interdisciplinary Studies (IDS)	38	26
Master of Art in Teaching (MAT)	50	34
Master of Education (MEd)	10	7
Missing	5	3

The teachers who responded to the survey have taught between 2-27 years (mean=14.00, SD=7.95). Table 3 lists the grade levels they currently teach.

Table 3

Grade Levels Taught by the Teachers (N = 40)

Grade Level	N	%
K - 3	7	18
4 - 5	4	10
6 - 8	13	33
K - 8	8	20
High School	4	10
K - 12	2	5
Missing	2	5

The college of education faculty who responded to the survey had teaching experience in K-12 ranging from 2-23 years, with a mean of 10.90 and a SD of 6.89. Their teaching experience in postsecondary level ranged from 2-32 years, with a mean of 13.06, and a SD of 7.25. All but two

of the respondents currently teach at the graduate level, and they represented all the programs and/or departments within the college. The majority (78%) have a PhD or an EdD degree and all received degrees related to education (e.g., curriculum and instruction, math education, special education, or general education).

Of the 44 administrators who responded to the survey, 37 (90%) are school principals, 3 (7%) are assistant principals, and 1 (2%) is a superintendent. When asked about their graduate degree field, all 30 administrators who responded reported having graduate degrees in education and/or educational administration. Table 4 describes the teaching and administrative experience of the administrators who responded to the survey.

Table 4

Experience of Administrators in Teaching and Administration (N = 44)

Years of Experience in	N	Range	Mean	SD
Teaching K - 8 Level	31	2 - 26	12.00	5.51
Teaching High School Level	15	1 - 22	11.00	5.96
Teaching Postsecondary Level	3	1 - 3	2.33	1.16
Administration K - 8 Level	32	2 - 16	8.31	4.10
Administration High School Level	12	3 - 14	6.58	3.37

Instrument

Each group of stakeholders (students, faculty, teachers, and administrators) was sent a slightly different form of the questionnaire. All four questionnaires included a common section in which 15 research skills were listed (Table 5). The respondents were asked to rate each skill on a Likert scale of 1-5 (1=Not Important to 5=Very Important) and to explain the reason(s) for the rating assigned. Thus, the questionnaires yielded quantitative (numerical) data used to conduct the following: rank-order the skills, and compare responses of the four groups using Pearson correlation and analysis of variance. The qualitative (narrative) data were used to explain the reasons people assigned their ratings. Other parts of the questionnaires gathered demographic data, unique and relevant to each group (e.g., years of teaching experience, grades and subject teaching, administrative position, and highest degree). Part B of the questionnaire had an open-ended question which asked the respondents to explain why they think teachers should have research skills and how they think research can contribute to educational practice. (The analysis of the responses to this question is not presented in this paper and will be included in a later report.) This part of the questionnaire also included other questions pertaining to each group of respondents.

Results

While a considerable amount of data, both numerical and narrative, was collected (over 100 of explanations of the ratings assigned and responses to open-ended questions), only part of the findings are reported here due to space limitations. The ratings assigned by each respondent within each group of respondents (i.e., students, faculty, teachers, and administrators) were used to find the mean for each skill for each group and for the four groups combined. The means were then converted into ranks (Table 6), with 1 assigned to the skill which was rated as most important (highest mean) and 15 was assigned to the skill rated as least important (lowest mean).

Of the 15 skills, the three which received the highest ratings by the four groups combined were: Skill #1: "Be able to use *library resources*" (mean rating of 4.55); Skill #13: "Be able to carry out *action research in a classroom setting*" (mean rating of 4.30); and Skill #2: "Be able to *critically analyze professional literature*" (mean rating of 4.17).

The skill which was assigned the lowest mean rating (a rank of 15) was skill #9: "Know how to *compute and interpret intermediate or advanced statistics* (mean rating of 2.44). The second lowest was skill #15: "Be able to *publish research findings*" (mean rating of 2.64). The third lowest rating was assigned to skill #12: "Be able to *carry out a formal thesis study*" (mean rating of 3.02). However, even these three lowest-ranking skills received many ratings of 3, 4, and even 5 (on a scale of 1-5) and quite a few respondents indicated these skills may be important to those seeking advanced degrees, but probably less important for the practicing teacher.

The respondents were asked to explain the ratings they assigned to each skill. While not all of them did so, many did, allowing us a glimpse into the "why"; that is, why they believed a skill to be important or unimportant. Respondents believed that knowing how to use the library resources is important because "It keeps teachers up to date on educational research"; "We have to know about latest resources to continue growing"; "To be an ongoing student of education, you must feel at ease with these tools"; and "Critically important to keep up with new innovations in our field". Being able to conduct research in one's own classroom was viewed as "essential for today's reflective practitioner"; "It could improve your class"; "Yes! Students need to connect research to their real work"; "Every teacher must begin to learn the value of this as a way of reflection on own teaching"; "This is what we all should do in order to change and improve"; and "This is the core of our profession. Working in the classroom and knowing first hand what works and doesn't work". Respondents also valued the ability to critically read and evaluate research because "it is important for a teacher to discern a study that is truly significant and one that is mediocre"; "Critical reading is important to be well informed"; "[To] judge the merits of a proposed teaching approach, etc., and not simply run after the latest educational fad"; "It is critical to be able to critically analyze professional literature because policy and curriculum decisions are often based

Table 5

The Research Skills Included in All Four Surveys

Skill Number	Skill
1	Be able to *use library resources* (e.g., computer-based systems, such as ERIC, references).
2	Be able to *critically analyze professional literature* (e.g., journal articles, books, microfiche).
3	Be able to *write a literature review* on a chosen topic.
4	Be able to *write a paper/report* in an approved writing style (e.g., APA style).
5	Understand the *different research paradigms* (e.g., qualitative, quantitative, and critical), their basic premises, advantages, and limitations.
6	Be able to *write a research proposal*.
7	Know *which data analysis procedures are appropriate* for different research designs.
8	Know how to *compute and interpret basic statistics*.
9	Know how to *compute and interpret intermediate or advanced statistics*.
10	Know how to *collect and interpret qualitative data*.
11	Be able to *conduct a small-scale research study assigned as a research class project*.
12	Be able to *carry out a formal thesis study*.
13	Be able to carry out *action research in a classroom setting*.
14	Be able to *present research findings* at professional meetings.
15	Be able to *Publish research findings* in professional literature.

Table 6

Mean Ratings of the Skills by Group and Combined

Skill No	Students (N=146)	Faculty (N=37)	Teachers (N= 40)	Administrators (N=44)	Combined (N=267)
	Mean (Rank)	Mean (Rank)	Mean (Rank)	Mean (Rank)	Mean (Rank)
1	4.55 (1)	4.81 (1)	4.68 (1)	4.23 (1)	4.55 (1)
2	4.22 (3)	4.58 (2)	4.03 (6.5)	3.80 (3)	4.17 (3)
3	3.64 (10)	3.89 (8)	3.38 (13)	3.33 (6)	3.58 (9)
4	3.90 (5)	3.97 (5.5)	4.35 (2)	3.64 (4)	3.93 (4)
5	3.69 (8)	4.08 (4)	3.88 (9)	3.52 (5)	3.74 (6)
6	3.85 (6)	3.41 (10)	4.03 (6.5)	3.30 (7)	3.73 (7)
7	3.54 (12)	3.36 (11)	3.73 (10)	2.80 (12)	3.42 (12)
8	3.59 (11)	3.68 (9)	4.08 (5)	2.96 (11)	3.57 (10)
9	2.43 (15)	2.19 (15)	2.75 (14)	2.39 (14)	2.44 (15)
10	3.66 (9)	3.95 (7)	3.69 (11)	2.98 (10)	3.59 (8)
11	3.94 (4)	3.97 (5.5)	4.25 (4)	3.27 (8)	3.88 (5)
12	3.06 (13)	2.71 (13)	3.53 (12)	2.71 (13)	3.02(13)
13	4.37 (2)	4.46 (3)	4.28 (3)	3.98 (2)	4.30 (2)
14	3.67 (9)	3.22 (12)	3.90 (8)	3.02 (9)	3.54 (11)
15	2.75 (14)	2.61 (14)	2.74 (15)	2.18 (15)	2.64 (14)

on research", and "A professional in any area should be able to determine if the information should be discarded or investigated further".

The least important skill, according to the respondents, is the ability to compute and interpret intermediate and advance level statistics. They explained that "for most teachers, this gets into too much detail than can be used everyday"; "Get real!"; "Not necessary unless one chooses to specialize in this field"; and "Too many other things to learn". Several respondents distinguished between the ability to compute and interpret statistics, seeing the latter as much more important than the former. Being able to publish research was rated as the second least important skill. Comments included: "Not interested in being published"; "I think if one is interested in academia - Yes. But for most of us who want to be classroom teachers - No"; "Not applicable to most teachers"; and "A useful skill, but only a small percentage of inservice teachers are interested in doing this". Some said that although it was important for teachers to share information, it was not a priority. Many did not see the ability to carry out a formal research study as very important, saying that it was "not essential for teachers"; "Not necessary for those who have no intention of going after advance degree"; "Rarely needed by most educators"; and "Why would teachers need to do that?" Others did see this skill as important and one said that "at the graduate level, students should be able to add to their field through research and the formulation of a thesis".

A series of analyses of variance (ANOVA) was run to compare the mean ratings of the four groups on all skills. Because 15 such analyses were run, it is expected that several will turn out significant simply by chance. To account for the high number of ANOVA tests performed, the critical value (alpha) was set at .003, instead of the traditional .05. (This level was determined by dividing the .05 level by 15, the number of times the test was performed.) However, in this study, 7 of the 15 tests yielded an F-ratio that was significant at p levels between .003 and .0001 (Table 7). One main reason for the high number of significant F-ratios was the fact that the mean rating assigned by the administrators to the 15 skills was lower than the other three groups in 13 cases and tied with another group (but still lower than the remaining two groups) in one case. (See Table 6.)

Discussion and Conclusions

In this study, the ability to use the library resources (skill #1) was rated as most important, and the ability to critically analyze professional literature (skill #2) was rated as the third most important. These findings confirm earlier research by Mayher (1991) who argued against the belief that theory and research based on theory are not relevant to the practice of education. Mayher stated that "we have built our practice on unexamined theories and inapplicable research" (p. 4). Brause and Mayher (1991) and Nath and Tellez (1995) also cautioned educators not to accept educational theory "on blind faith", but to critically evaluate information.

Clearly, participants in my study saw action research and classroom research as crucial to the role of the teacher. The ability to conduct action research in a classroom setting (skill #13) was rated as the second most important (mean of 4.30), confirming earlier findings by other researchers

(e.g., Gage & Berliner, 1989, Griffin, 1984; and Oberg & McCutcheon, 1990). Practitioner research was also supported by Anderson et al. (1994) and Burnaford et al. (1996).

Table 7

Comparing the Four Groups on All Skills Using Analysis of Variance

Skill Number	F-Ratio	P-Value
1	5.12	.0019*
2	6.00	.0006*
3	2.41	.0670
4	3.07	.0283
5	2.47	.0619
6	4.48	.0044
7	6.80	.0002*
8	7.60	.0001*
9	1.78	.1517
10	6.17	.0005*
11	7.01	.0002*
12	3.57	.0147
13	3.13	.0263
14	5.55	.0011*
15	2.75	.0433

Note: * Exceeded a p-level of .003

All three skills which were assigned the lowest ratings are associated with more formal degree requirements and advance studies that may not be viewed as relevant to the practicing teacher. However, even these skills had mean ratings around the middle of the 5-point Likert scale (skill #9 had a mean of 2.44; skill #15 had a mean of 2.64; and skill #12 had a mean of 3.02).

The results reported in Tables 6 and 7 reveal differences among the four groups of respondents. While all agreed that the ability to use the library resources (skill #1) is the most important skill to be acquired in graduate teacher training programs, and that the ability to conduct research in the classroom (skill #13) is the second or third most important skill, there was some disagreement about skill #2. The students, faculty, and administrators viewed it as second or third most important, while the teachers gave it a much lower of importance and ranked it as the sixth most important (tied with skill #6, being able to write a research proposal).

The four groups had similar opinions when it came to selecting the three lease important skills. Skill #9 (knowing how to compute and interpret intermediate and advance level statistics) was ranked as the lowest or second lowest skill by all four groups, as was skill #15 (being able to publish in professional literature). However, while the students, faculty, and administrators ranked skill #12 (being able to carry out a formal thesis study) as the third least important, and the teachers ranked it as the fourth least important, the teachers ranked skill #3 (being able to write a literature review on a chosen topic) as the third least important. The other three groups of respondents ranked skill #3 higher (as 6th, 8th, and 10th most important). More research, probably with a larger group of respondents, is needed to further explore these differences in opinions among the groups.

It is encouraging to see that action research was rated among the top three skills. Being able to use the library resources and to critically analyze professional literature may be viewed as skills necessary and useful for teachers engaging in action research. In order for teachers to be able to carry out research in their own classrooms, they need to acquire experience in conducting research. The importance of research project as part of educational research course was advocated by Van Haneghan (1997), although the focus of his study was not on acquiring skills needed for the practicing teacher.

Within the school culture, the administration support is crucial to teacher research, as was demonstrated in a study by Dana (1995). It was encouraging, then, to find in my study that when the administrators were asked what <u>should</u> be the level of research skills of their faculty in order to be effective teachers, their mean rating was 3.24. The administrators rated, just like the other three groups, skill no #13 (action research) as the second most important, but their mean rating of 3.98 was lower than the mean ratings assigned by the other three groups, who were quite similar to one another. The students' mean rating for this skill was 4.37, the faculty's mean was 4.46, and the teachers' mean was 4.28. The question of administrative support of their teachers' classroom research should be further investigated.

Faculty in graduate teacher education programs need to review and re-assess the contents of the research courses to ensure that they are not viewed as mere requirements to get a master's degree. Rather, these courses should provide students the opportunity to acquire skills that will enable them to be reflective practitioners, generators of knowledge, and systematic observers.

Those of us in teacher training institutions who design the curriculum, should involve our students and colleagues in the school in curricular design decisions. Officials in state board of education should also be involved and consulted, as they influence teacher certification requirements. Due to the limited amount of time devoted to research courses in graduate teacher training programs, the content of these courses should be carefully considered. When planning the research course sequence and content, we have to keep in mind that incorporating action research into graduate programs may be problematic for MAT students, because they do not have their own classrooms. Nevertheless, all students can conduct small-scale research studies, such as surveys, observations, interviews, and test score analysis.

It is hoped that the results of the study would help program directors and faculty of teacher training institutions design their curricula to include the most important and relevant research skills.

Plans for Further Research

In my next report, I plan to summarize responses to several open-ended questions. One question in Part B asked: In your opinion, what advantages does research training have for the practicing teachers? How can teachers use their research training to improve their practice? The responses of the four groups to this question will be compared and analyzed. Several questions in the four survey forms were directed at only one or two groups of stakeholders. For example, administrators were asked what they think is the role of the administrator in promoting teacher research. Responses to these specific questions will be summarized in my next report. In addition, I plan to further analyze the numerical data, including a factor analysis of the 15 skills. I may also administer the survey to additional teachers and administrators and to faculty in other teacher training institutions to confirm the validity and stability of the trends observed so far.

I would like to expand the study to other teacher training institutions, and call upon my colleagues in other universities to administer the survey to their own faculty and students

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